

Lumen[®] Cloud Connect: MPLS / IP VPN to AWS (hosted)

Direct, secure, private connection to AWS (hosted)

LUMEN[®]

Purpose

- The purpose of this document is to provide an end-to-end walkthrough to set up Hosted Direct Connect for the first time using Lumen Cloud Connect.
- Information contained is provided to serve as a supplement to AWS documentation linked throughout this document. Be sure to check the provided links to obtain the most up-to-date information and for more details pertaining to AWS processes.

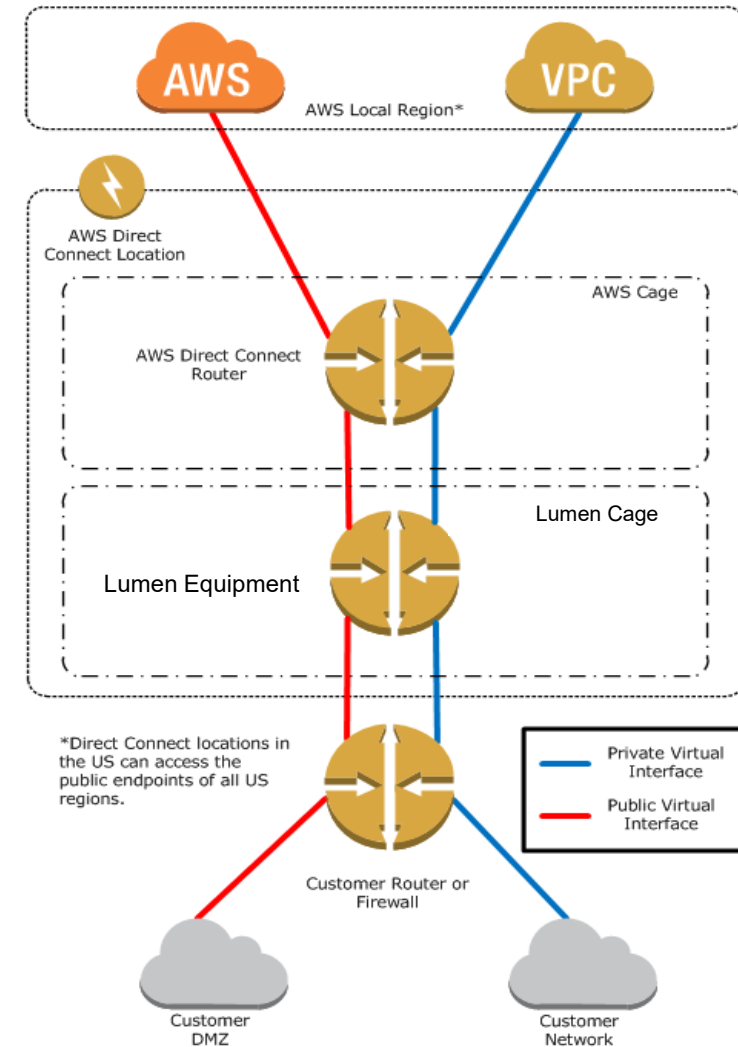
Disclaimer: The material in this guide is for informational purposes only and is taken from AWS's website material. All AWS related configuration information is based off of the AWS Console configuration instructions from the AWS website.

Contents / steps

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Background information

- AWS Direct Connect links your internal network to an AWS Direct Connect location.
- One end of the connection is connected to your network, the other to an AWS Direct Connect router.
- With this connection in place, you can create virtual interfaces directly to the AWS cloud services, bypassing the public Internet.
- An AWS Direct Connect location provides access to Amazon Web Services in the region it is associated with, as well as access to other US regions.
- For example, you can provision a single connection to any AWS Direct Connect location in the US and use it to access public AWS services in all US regions.
- [Learn more about Direct Connect](#)



Background information, cont.

- Getting started with AWS Direct Connect: <https://aws.amazon.com/directconnect/getting-started/>
- This document is for hosted connections using AWS Direct Connect.
- The supporting service ordered from Lumen is Hosted Cloud Connect to AWS.
- The 3rd option in the 3 scenarios below (screenshot from the AWS Direct Connect Getting Started webpage – link above) is applicable to this Lumen service type.

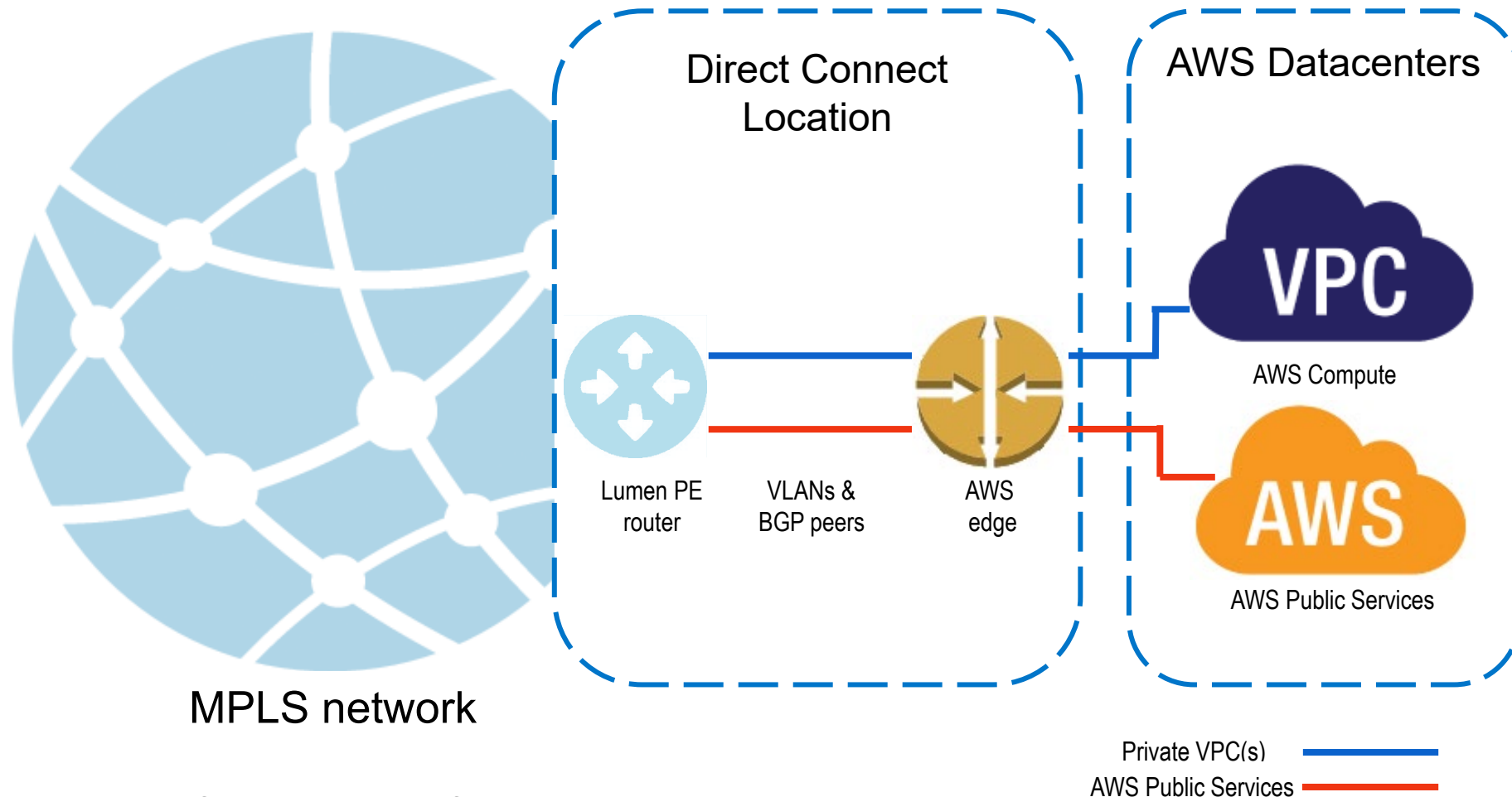
Getting started with AWS Direct Connect

AWS Direct Connect enables you to directly interface your on-premises network with a device at an AWS Direct Connect location. The following procedures demonstrate the common scenarios to get set up with an AWS Direct Connect connection. You can also refer to the article [How do I provision an AWS Direct Connect connection?](#) in the Knowledge Center.

You can set up an AWS Direct Connect connection in one of the following ways.

Scenario	Method
Present at AWS Direct Connect Location	Connect directly to an AWS device from your router at an AWS Direct Connect location using 1Gbps or 10Gbps connection.
Connect from your premises	Work with a partner in the AWS Partner Network (APN) or a network provider that will help you connect a router from your data center, office, or colocation environment to an AWS Direct Connect location. The network provider does not have to be a member of the APN to connect you.
Connection via AWS Direct Connect Partner	Work with a partner in the AWS Partner Network (APN) who will create a hosted connection for you. Sign up for AWS, and then follow the instructions to accept your hosted connection .

Topology: Hosted Cloud Connect for AWS Direct Connect



You are responsible for any NAT configuration required when using any AWS public services.

Roles and responsibilities

Steps required to set up AWS Direct Connect connectivity	End customer	Lumen	AWS
Set up connectivity to AWS Direct Connect location			
Order Lumen Hosted Cloud Connect service(s) to AWS Direct Connect	X		
Decide on the type of VIF required (public or private)	X		
Create virtual circuit to AWS		X	
Monitor virtual circuit to AWS		X	
Set up BGP peering between Lumen PE and AWS edge device			
Configure BGP peering on Lumen PE router facing AWS		X	
Configure BGP peering on AWS side using AWS console facing Lumen		X	
Link services on AWS to the dedicated circuit/hosted connection			
Accept hosted connection using the AWS console	X		
Create and link virtual interface, virtual private gateway, direct connect gateway, etc. as applicable using the AWS console	X		

Request Lumen Cloud Connect service

To order a Lumen Cloud Connect to AWS Direct Connect, contact your Lumen representative. Information needed by Lumen to complete the connection:

- AWS Account ID
- AWS service(s) you are connecting to
 - Public virtual interface (VIF) requirements
 - Virtual private cloud (VPC) / virtual interface (VIF) requirements
 - Identify how many VPCs/VIFs you need connectivity to (Each VPC/VIF requires a separate logical connection with Lumen Hosted Cloud Connect.)
 - Determine the amount of bandwidth needed to each VPC/VIF (Note: Maximum bandwidth per VPC/VIF is 500Mbps.)
- Which AWS region and/or Direct Connect location you want to connect to
- What contractual term length you need: 1 year, 3 years, 5 years, etc.

Lumen provision Cloud Connect to AWS

- Upon network order submission, Lumen provisions a layer-3 IP VPN MPLS connection to the requested interconnect point
 - Lumen configures VLAN tagging and layer-3 BGP routing on both the Lumen side and within the AWS console.
- Lumen completes configuration, and provides you with information documenting the layer-3 turn-up on AWS side per environment
 - appropriate IP subnet(s)
 - autonomous system number (ASN) info
 - AS number
 - BGP authorization key
 - VLAN ID

Accept the AWS Hosted Connection

- Getting started with AWS Direct Connect:
https://docs.aws.amazon.com/directconnect/latest/UserGuide/getting_started.html
- [Learn how to accept your hosted connection in the AWS console](#)
- The screenshot below has the 3 different AWS Direct Connect options. Note that for Lumen Hosted Cloud Connect service the 3rd option is applicable.

You can set up an AWS Direct Connect connection in one of the following ways.

Port speed	Method
1 Gbps or higher	Connect directly to an AWS device from your router at an AWS Direct Connect location.
1 Gbps or higher	Work with a partner in the AWS Partner Network or a network provider to connect a router from your data center, office, or colocation environment to an AWS Direct Connect location. The network provider does not have to be a member of the APN to connect you.
Less than 1 Gbps	Work with a partner in the AWS Partner Network who can create a hosted connection for you. Sign up for AWS and then follow the instructions to accept your hosted connection .

Accept the AWS Hosted Connection, cont.

- Getting Started with AWS Direct Connect:
https://docs.aws.amazon.com/directconnect/latest/UserGuide/getting_started.html
- If you requested a hosted connection using Lumen Cloud Connect then a hosted connection has been created for you. (You cannot create it yourself.) You must accept it in the AWS console before you can create a virtual interface.
- To accept a hosted connection:
 1. Open the AWS Direct Connect console: <https://console.aws.amazon.com/directconnect/>.
 2. If necessary, select the region in which the hosted connection resides.
 3. In the navigation pane, click **Connections**.
 4. Select the hosted connection.
 5. Select the confirmation check box, then click **Accept Connection**.
- Continue to follow the AWS guidance to set up your AWS Direct Connect connection:
https://docs.aws.amazon.com/directconnect/latest/UserGuide/getting_started.html

AWS Direct Connect resources

Overview	https://aws.amazon.com/directconnect/
Details	http://docs.aws.amazon.com/directconnect/latest/UserGuide/Welcome.html
VPC endpoints	http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-endpoints.html
Pricing	https://aws.amazon.com/directconnect/pricing/ <ul style="list-style-type: none">• There are different price rates for traffic to the local AWS region and remote AWS regions
FAQ	https://aws.amazon.com/directconnect/faqs/
How to configure	http://docs.aws.amazon.com/directconnect/latest/UserGuide/getstarted_sub1g_provider.html
AWS Direct Connect limits	https://docs.aws.amazon.com/directconnect/latest/UserGuide/Welcome.html#directconnect_limits
Notes	<ul style="list-style-type: none">• Traffic to/from AWS is rate-limited to a maximum of 500Mbps when using a hosted connection. Higher bandwidths are available from Lumen and AWS using dedicated cross connect solutions. For more details, contact your Lumen representative.• A single Lumen Hosted Cloud Connect service supports a single Hosted Connection to a single virtual interface (VIF) / VPC or a single Direct Connect gateway. To support additional VIFs/VPCs/Direct Connect gateways, order additional Hosted Cloud Connect logical connections.